Effect of applied N and K fertilizers on growth and yield of Cinnamomum verum Presl (Cinnamon)

Sri Lanka is the major producer of cinnamon (*Cinnamomum verum Presl*) in the world and in 1997, Rs. 2651 million was earned as foreign exchange through exporting cinnamon bark and cinnamon oils. While harvesting, whole cinnamon plant is removed from the field and as a result response of cinnamon for applied fertilizer in variable quantities depending on the availability. This field experiment was, therefore, conducted to find out a suitable combination of N and K fertilizer levels for cinnamon at Cinnamon Research Station at Palolpitiya, Thihagoda.

Nine fertilizer treatment combinations formulated with three levels of N (N_1 -138, N_2 207 and N_3- 276 kg N ha^{-1} yr^{--1}) and three levels of K_2 O (K_1 -90, K_2 -135 and K_3 -180 kg K_2 O ha^{-1} yr^{--1}) with 03 replicates in factorial arrangement, in RCBD. Growth and yield performances of cinnamon were monitored until 4 th harvest.

With the increase of amount of N, height of the plant was to be increased but values were not significantly (P=0.05) different. No positive growth response could be found for higher levels of K., instead the highest plant height associated with K_1 level.

During the first two harvests, bark yield did not indicate any significant response for increased levels of N or K. However, in the 3rd harvest increase of N level, from 138 to 276 kg resulted a 275 increase in bark yield and the difference is statistically significant (P=0.01). Furthermore, a significant (P=0.050) NxK interaction was observed and N_1K_1 fertilizer combination gave the highest yield (45% over N_1K_1 combination).

Comparison of cumulative bark yield for all the four harvests did not show any significant difference. However, 3rd and 4th harvests together significantly responded for higher N level but not for K. Bark yields at N_1 and N_3 levels are 1124.9 and 1412.0 kg ha^{-1} yr^{-1}, respectively, and latter is 25% more than the other. The results indicate that application of higher levels of N is beneficial but not K. According to the findings, 276 kg of N and 90 kg of K_2 O ha^{-1} yr^{-1} was the most suitable combination of N and K fertilizer for Cinnamon.